

6: A Fraction of the Cost



OBJECTIVE

Students will use various coin denominations to explore the concept of fractions.



MATERIALS

- “Coin Value Spinner” handout
- “Fraction Circles” worksheets
- Scissors
- Brads (to assemble spinner) (1 per pair)



PREPARATIONS

- Make copies of the “Fraction Circles” worksheet (1 per student).
- Make copies of the “Coin Value Spinner” handout (1 per pair).



GROUPINGS

- Whole group
- Pairs



CLASS TIME

Two 30- to 45-minute sessions



CONNECTION

Mathematics



TERMS AND CONCEPTS

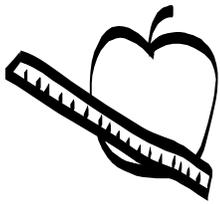
- Fractions
- Coins
- Nickel
- Dime
- Quarter
- Half dollar
- Dollar



BACKGROUND KNOWLEDGE

Students should have a basic knowledge of:

- Equal parts of a whole
- Coins and their value



Charting Coin Values and Quantities



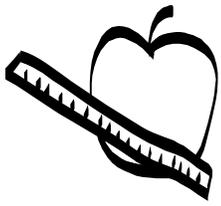
STEPS

Session 1

1. Distribute the “Fraction Circles” worksheets to each student.
2. Review with the students the value of each coin, from the nickel to the dollar. Write each coin’s value on the board as it is discussed.
3. Explain to students that coins and their values can be expressed as fractions. Since “cents” are units that make up a dollar, the portion of one whole dollar that any coin represents can be written as a fraction. For example, five cents is equal to $5/100$.
4. Referencing the fraction circles, hold up the whole circle and compare it to one dollar. Ask the students to locate the image of the dollar coin and cut it out. On the back, direct them to write this coin’s value.
5. Hold up the image of a half dollar and ask the students to locate and point to this coin on their worksheet. Ask the students to cut out the image of the coin and write its value on the back.
6. Ask students how many fifty-cent coins are needed to make one whole dollar. On the back of the half-dollar image, direct the students to write the fraction represented by this coin.
7. Ask the students to locate and cut out the circle that shows this fraction. On each of the coin halves, the students should write “50¢.”
8. Repeat steps 5 through 7 for each of the other coins.

Session 2

1. Instruct the students to cut their fraction circles into the pie shapes that represent the particular fraction (the halves fraction circle will be in two parts, etc.). Tell them to make piles for the four different types of fractions as they cut.
2. Place students in pairs. Model the instructions to the game:
 - a. Students will assemble the “Coin Value Spinner.”
 - b. The object of the activity is to see who can create a whole unit or \$1.00 first.
 - c. Students place their whole circle in front of them and take turns spinning the coin value spinner.
 - d. They then place the corresponding fraction piece onto their whole piece if they can. Players should trade for equal fraction parts—2 dimes (two one-tenths) and a nickel (a twentieth) for a quarter (a fourth), 2 quarters (fourths) for a half dollar (a half), etc.
 - e. The next player then spins and repeats the process detailed above.



A Fraction of the Cost

- f. Students take turns spinning, and the first person to create a whole unit or full dollar wins.



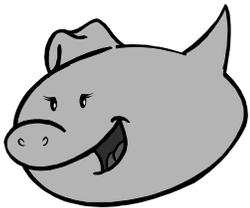
ENRICHMENT/EXTENSION

Divide the class into two teams and alternate asking fraction-related math questions (decide whether students can work as a group or can only answer if it's their turn) allowing them to use the chalkboard to figure the problem. When a team gets an answer correct, they can spin/roll and add to their team's fraction circle. Make sure that "trading down" becomes a part of the process: if a team fails to do so, the other team gets the turn.



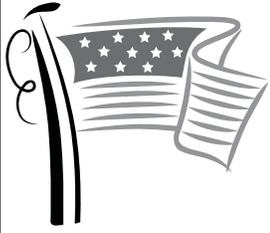
DIFFERENTIATED LEARNING OPTIONS

- For an optional activity players start with a whole unit (\$1.00) and subtract the amount that they roll. This forces them to trade in larger fractions for smaller ones ($\frac{1}{2}$ for $\frac{5}{10}$.) This may be more appropriate for fourth graders.
- Student can also estimate and then check how many different combinations can make a whole unit (\$1.00.)

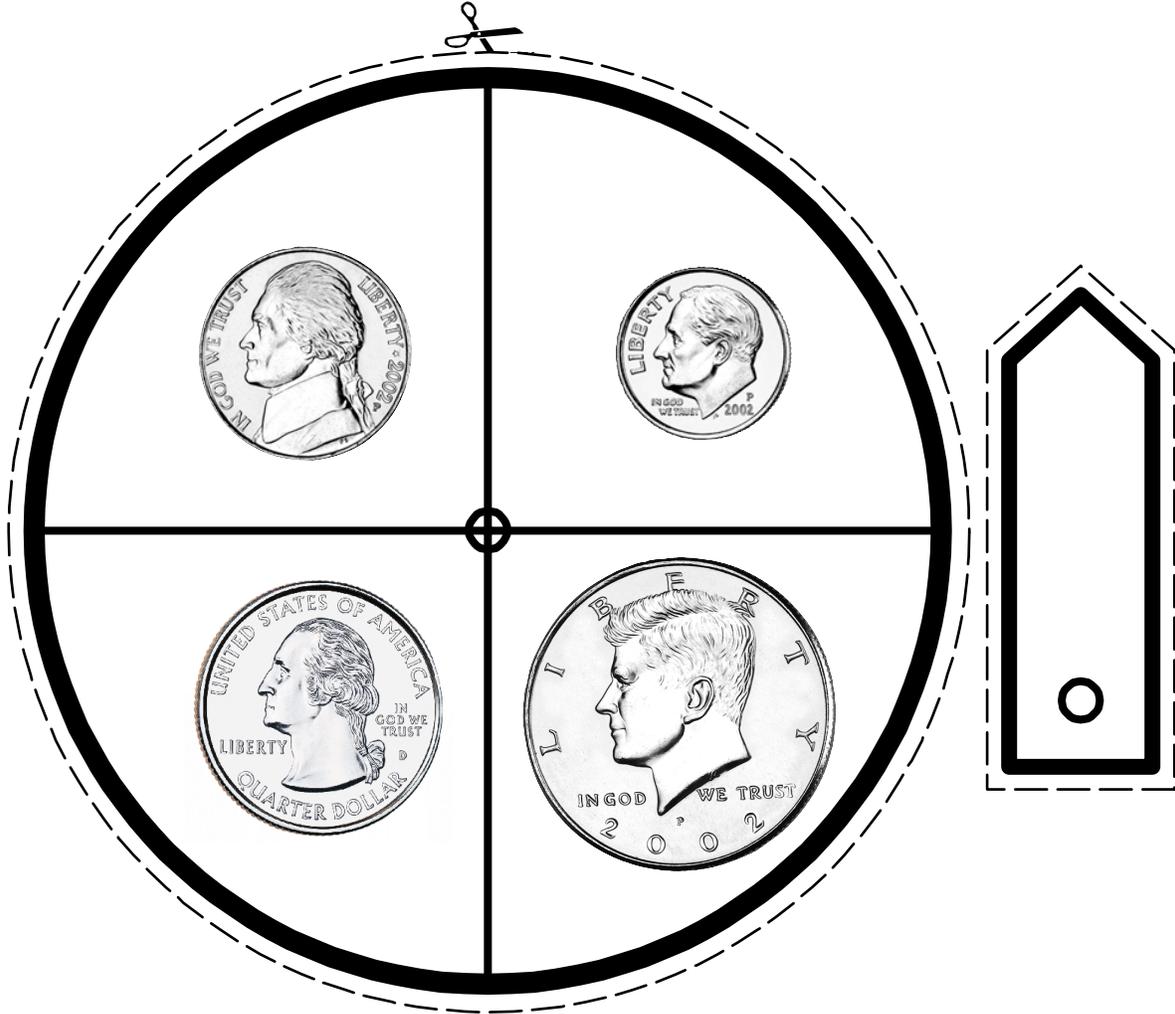
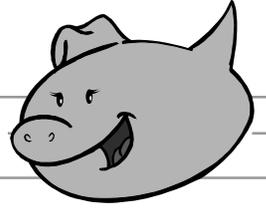


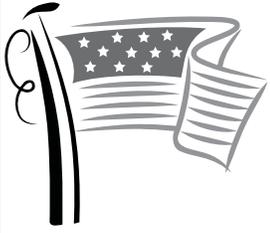
HPC CONNECTION

As a follow-up to this activity, invite your students to try out the game described in the Teacher Feature called "Parts of a Whole." You can find this activity and many more in the Teacher section on the United States Mint H.I.P Pocket Change™ Web site! (http://www.usmint.gov/kids/index.cfm?FileContents=/kids/teachers/TF_partsOfAWhole.cfm)

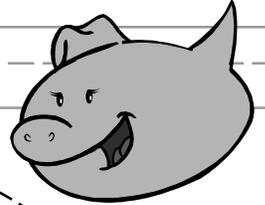


Coin Value Spinner

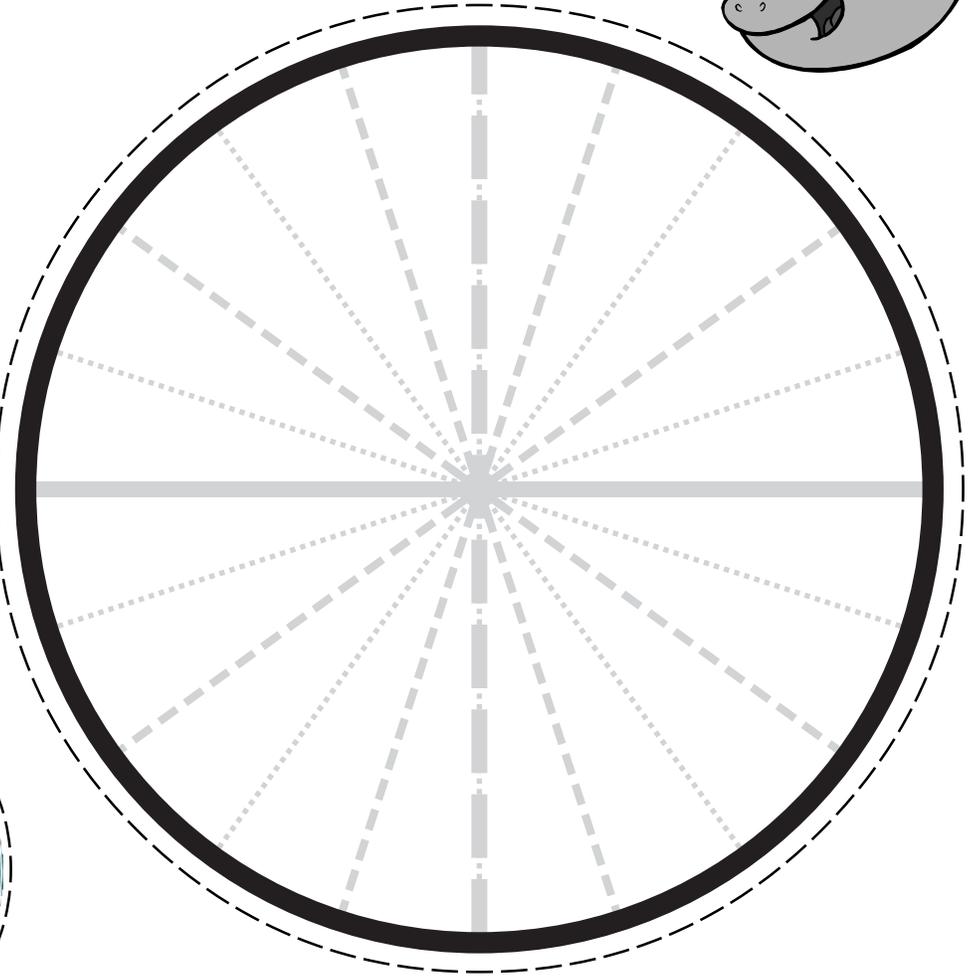


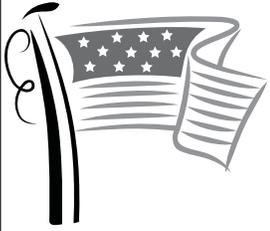


Fraction Circles (1)

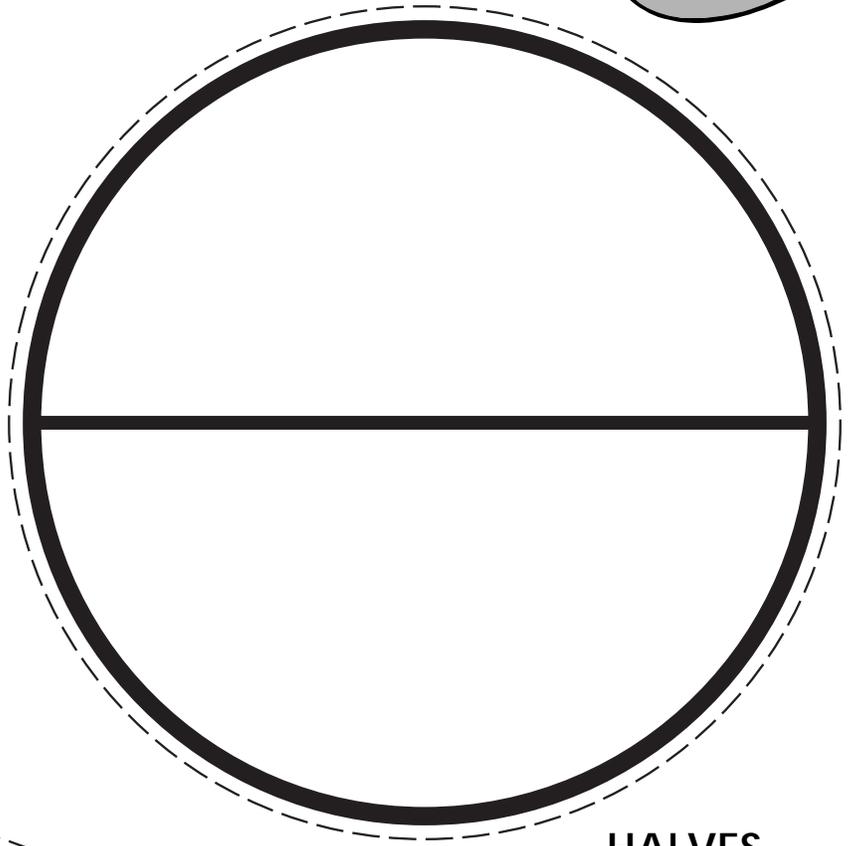
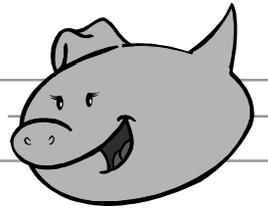


WHOLE



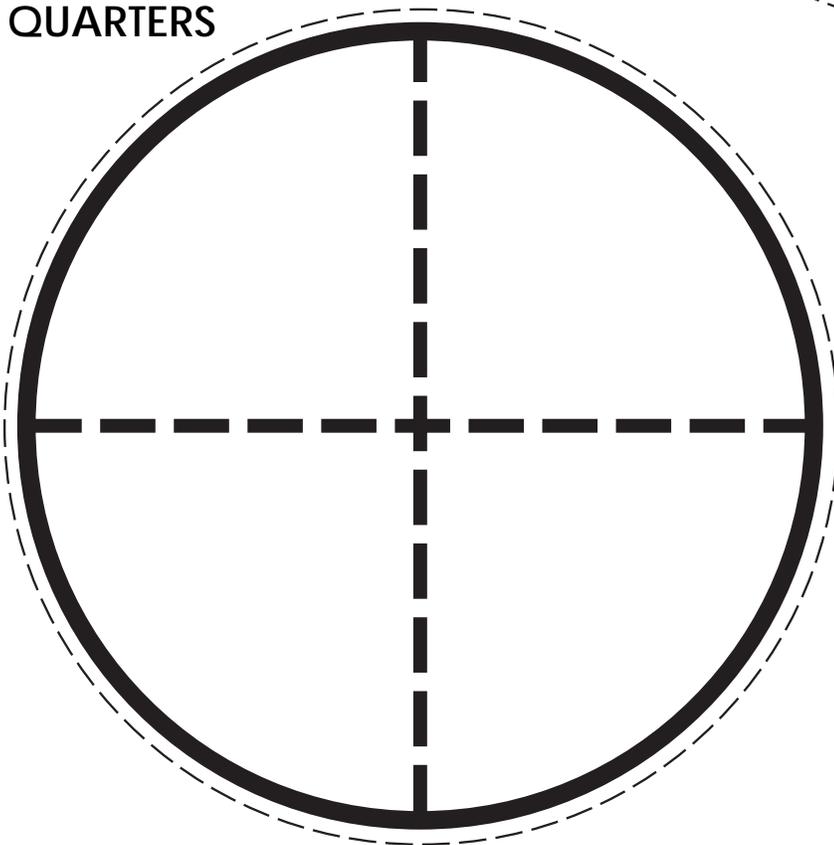


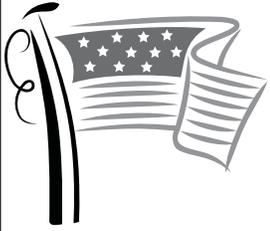
Fraction Circles (2)



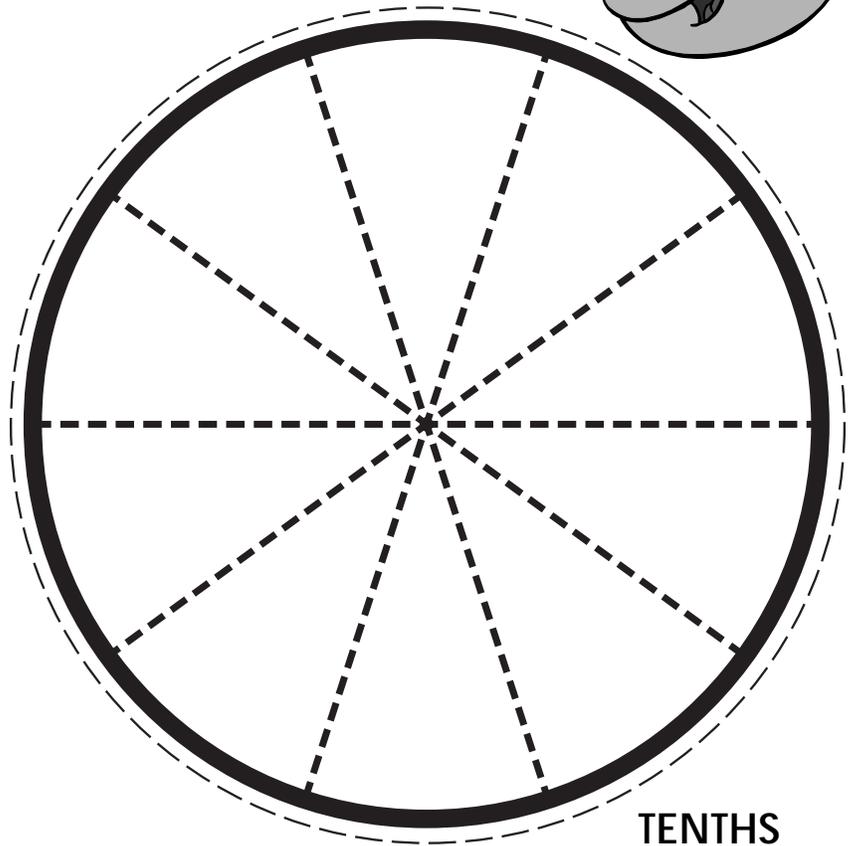
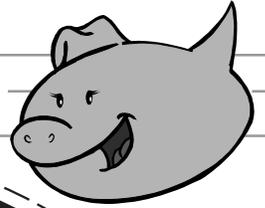
QUARTERS

HALVES





Fraction Circles (3)



TWENTIETHS

TENTHS

